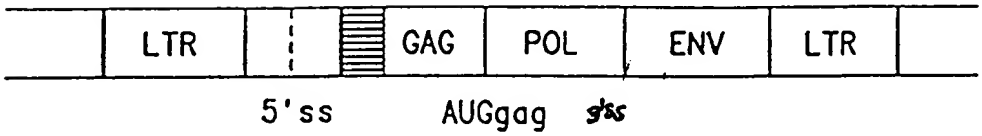

FIG. 1

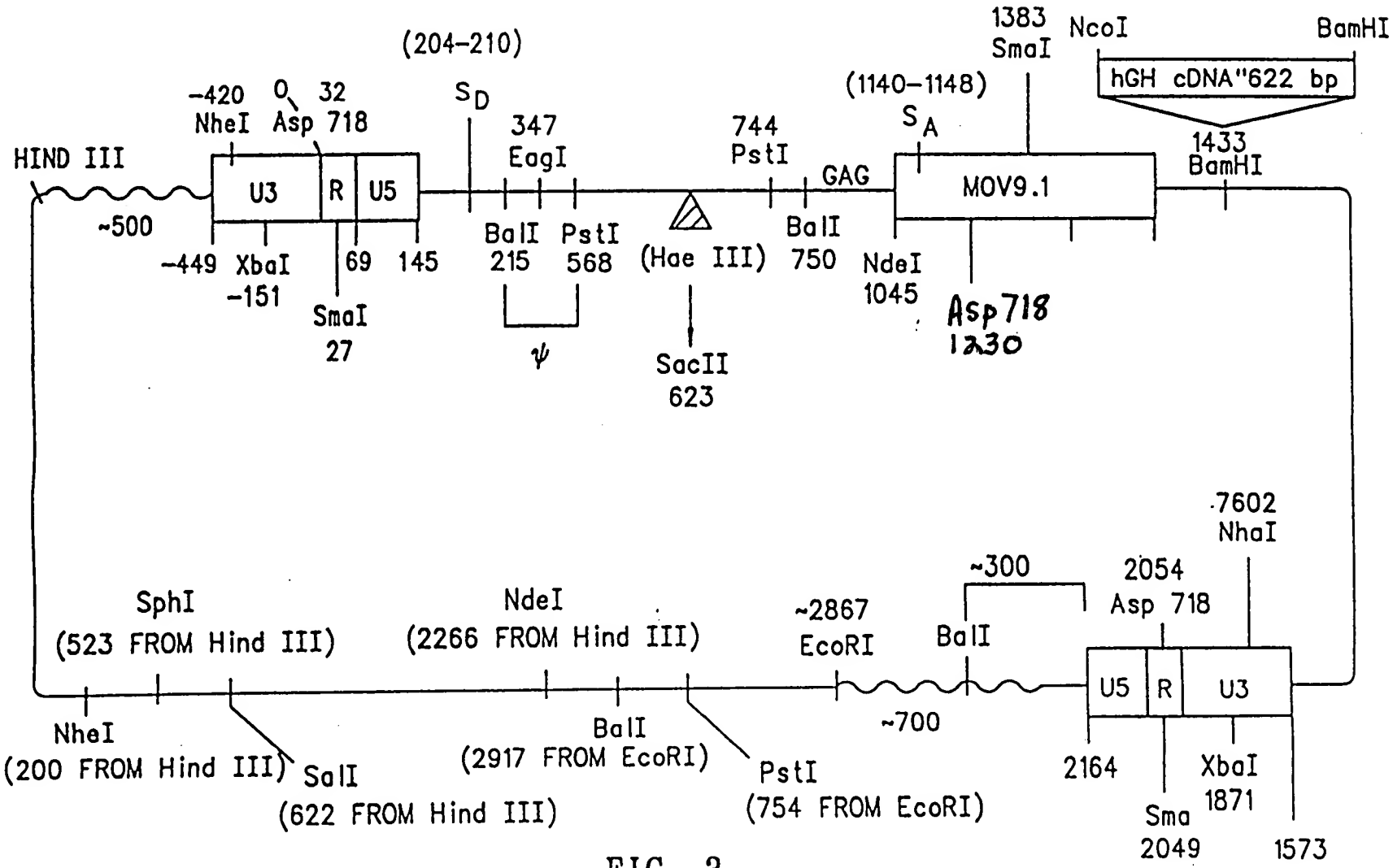
HIND III
~500
-420
NheI
0
Asp
32
718
U3
R
U5
-449
XbaI
-151
69
SmaI
27
145
(204-210)
SD
347
EagI
BalI
215
PstI
568
ψ
(Hae III)
SacII
623
744
PstI
BalI
750
GAG
(1140-1148)
SA
NdeI
1045
1383
SmaI
MOV9.1
Asp718
1230
NcoI
BamHI
hGH cDNA"622 bp
1433
BamHI
7602
NhaI
~300
2054
Asp 718
SphI
(523 FROM Hind III)
NdeI
(2266 FROM Hind III)
~2867
EcoRI
BalI
U5
R
U3
NheI
(200 FROM Hind III)
SalI
(622 FROM Hind III)
BalI
(2917 FROM EcoRI)
PstI
(754 FROM EcoRI)
~700
2164
Sma
2049
XbaI
1871
1573

FIG. 3

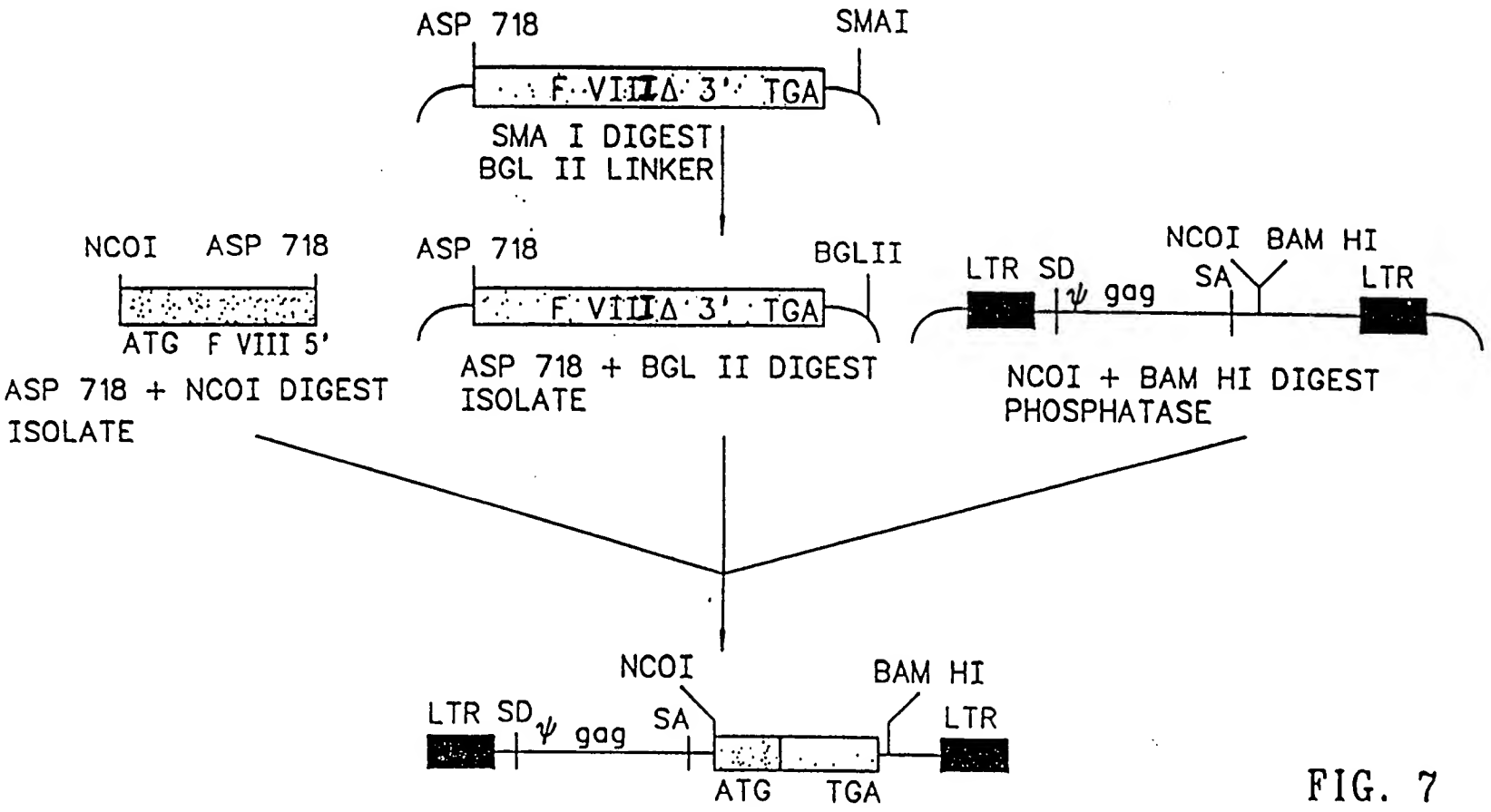
ASP 718
SMAI
F VIIIΔ 3' TGA
SMA I DIGEST
BGL II LINKER
NCOI
ASP 718
ATG F VIII 5'
ASP 718 + NCOI DIGEST
ISOLATE
ASP 718
BGLII
F VIIIΔ 3' TGA
ASP 718 + BGL II DIGEST
ISOLATE
NCOI BAM HI
LTR SD
ψ gag
SA
LTR
NCOI + BAM HI DIGEST
PHOSPHATASE
NCOI
BAM HI
LTR SD
ψ gag
SA
LTR
ATG
TGA

FIG. 7

FIG. 8

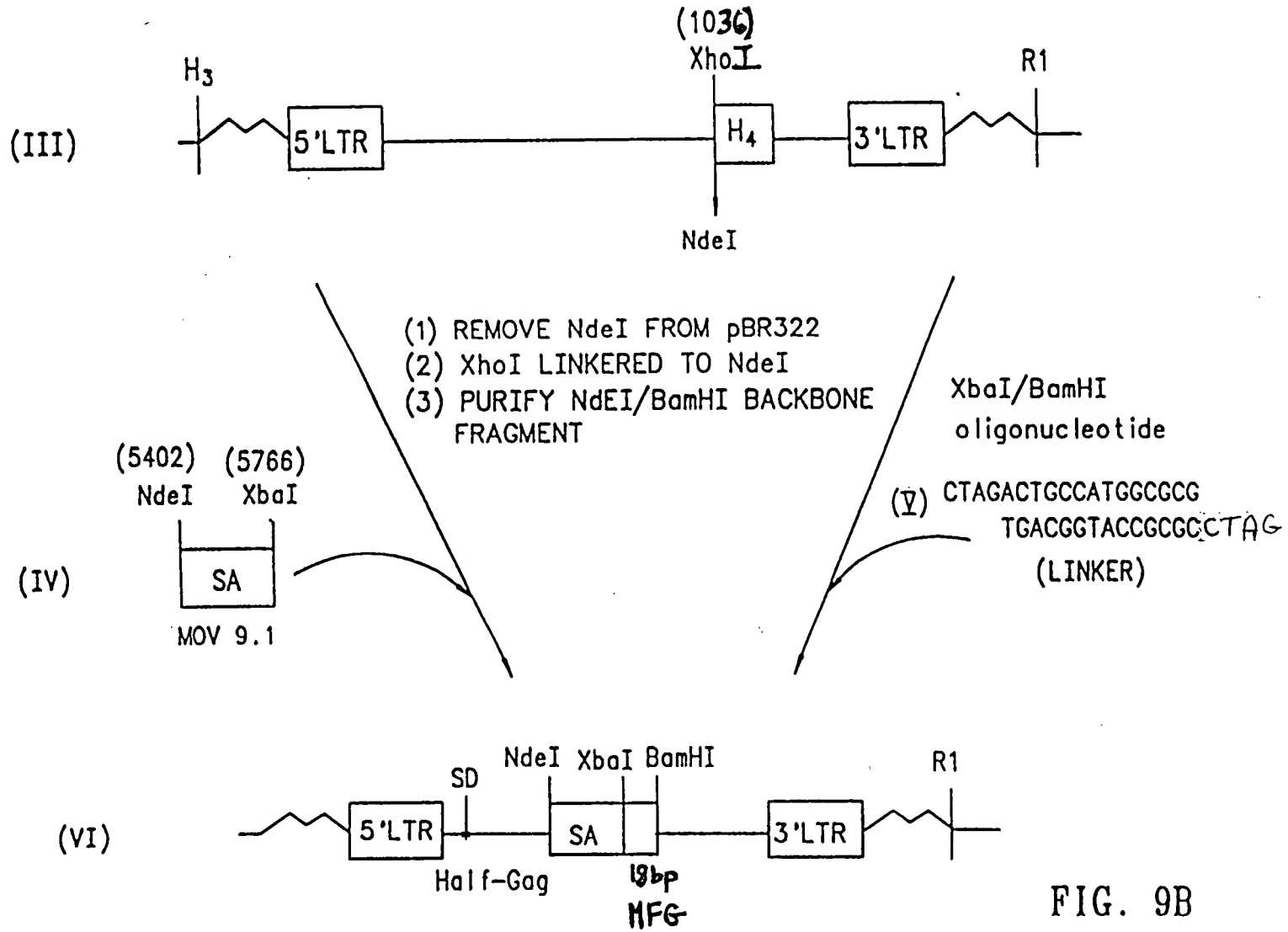
(III)
(1036)
XhoI
H3
R1
5'LTR
H4
3'LTR
NdeI
(1) REMOVE NdeI FROM pBR322
(2) XhoI LINKERED TO NdeI
(3) PURIFY NdeI/BamHI BACKBONE FRAGMENT
XbaI/BamHI
oligonucleotide
(5402)
NdeI
(5766)
XbaI
(IV)
SA
MOV 9.1
(V) CTAGACTGCCATGGCGCG
TGACGGTACCGCGCCTAG
(LINKER)
(VI)
SD
NdeI XbaI BamHI
R1
5'LTR
SA
3'LTR
Half-Gag
18bp
MFG

FIG. 9B

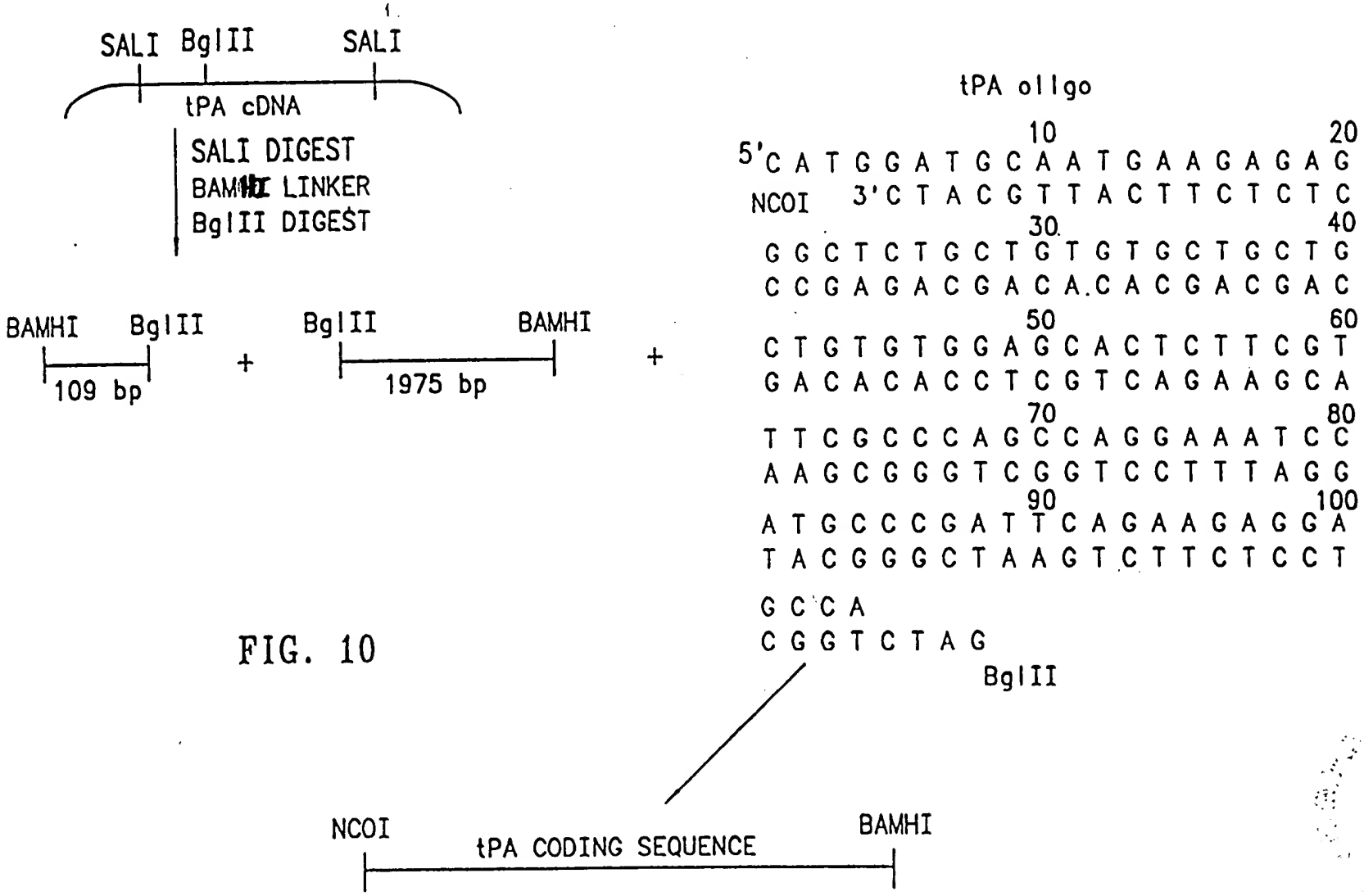
SALI BglII SALI
tPA cDNA
SALI DIGEST
BAMHI LINKER
BglII DIGEST
BAMHI BglII
109 bp
+
BglII BAMHI
1975 bp
+
tPA oligo
10 20
5'C A T G G A T G C A A T G A A G A G A G
NCOI 3'C T A C G T T A C T T C T C T C
30 40
G G C T C T G C T G T G C T G C T G
C C G A G A C G A C A C A C G A C G A C
50 60
C T G T G T G G A G C A C T C T T C G T
G A C A C A C C T C G T C A G A A G C A
70 80
T T C G C C C A G C C A G G A A A T C C
A A G C G G G T C G G T C C T T T A G G
90 100
A T G C C C G A T T C A G A A G A G G A
T A C G G G C T A A G T C T T C T C C T
G C C A
C G G T C T A G
BglII
NCOI
tPA CODING SEQUENCE
BAMHI

FIG. 10

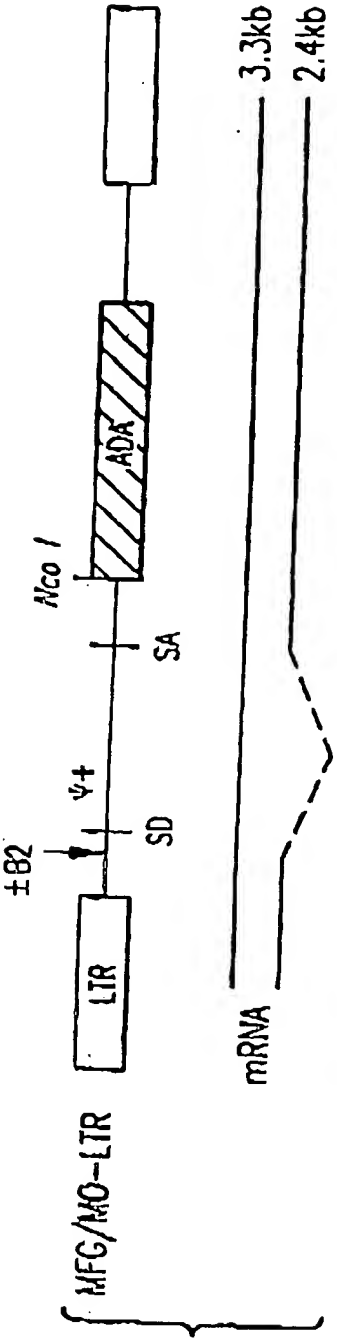

FIG.11A

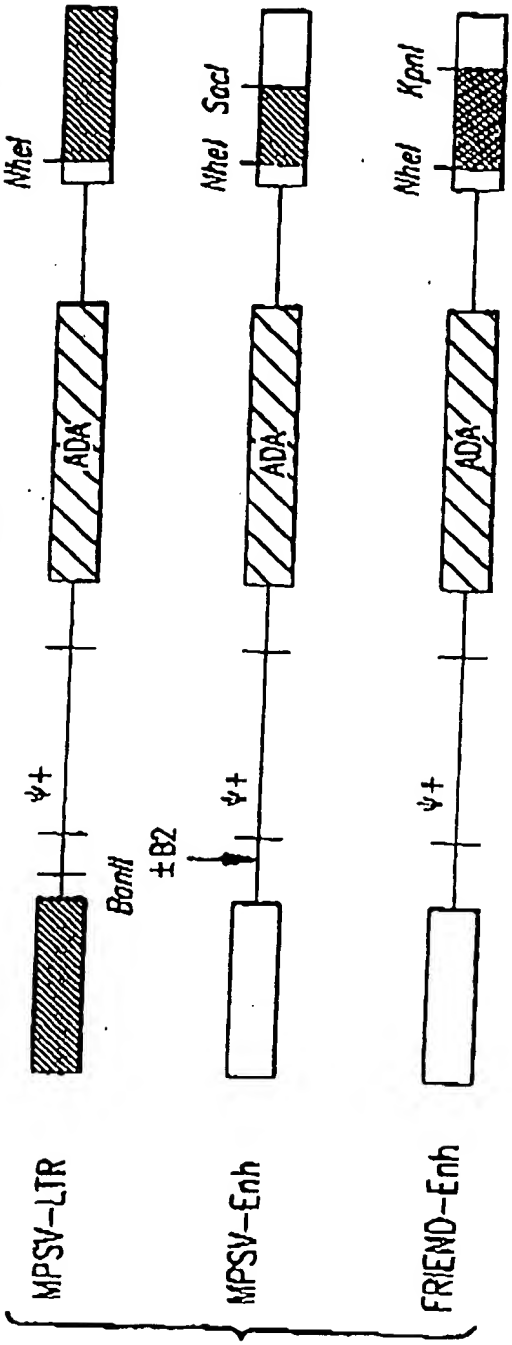

FIG.11B

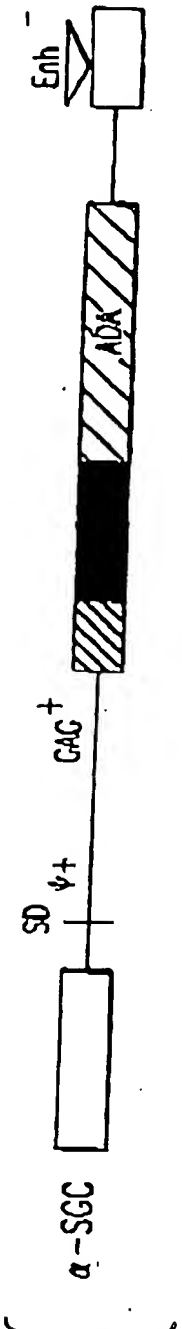

FIG.11C

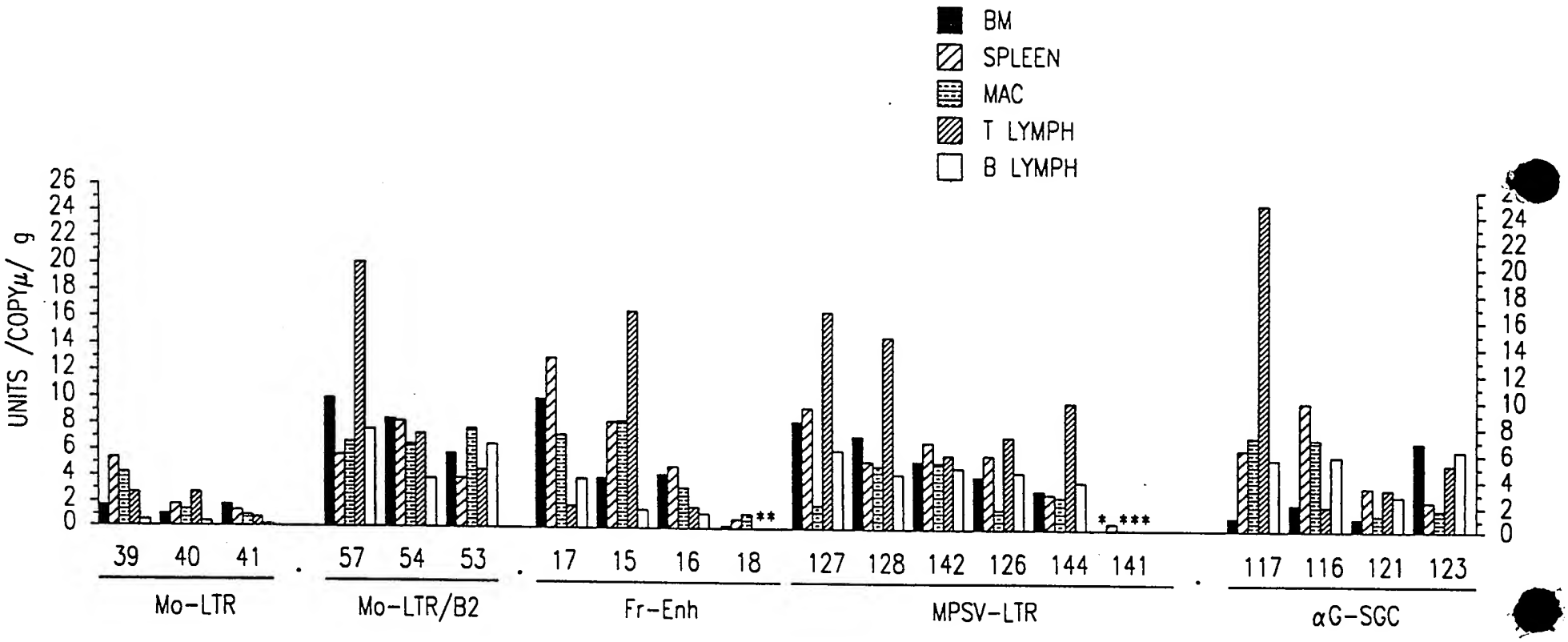
BM
SPLEEN
MAC
T LYMPH
B LYMPH
UNITS /COPYμ/ g
0
2
4
6
8
10
12
14
16
18
20
22
24
26
39 40 41
57 54 53
17 15 16 18
127 128 142 126 144 141
117 116 121 123
Mo-LTR
Mo-LTR/B2
Fr-Enh
MPSV-LTR
αG-SGC
**
*
***

FIG. 13A

FIG. 15

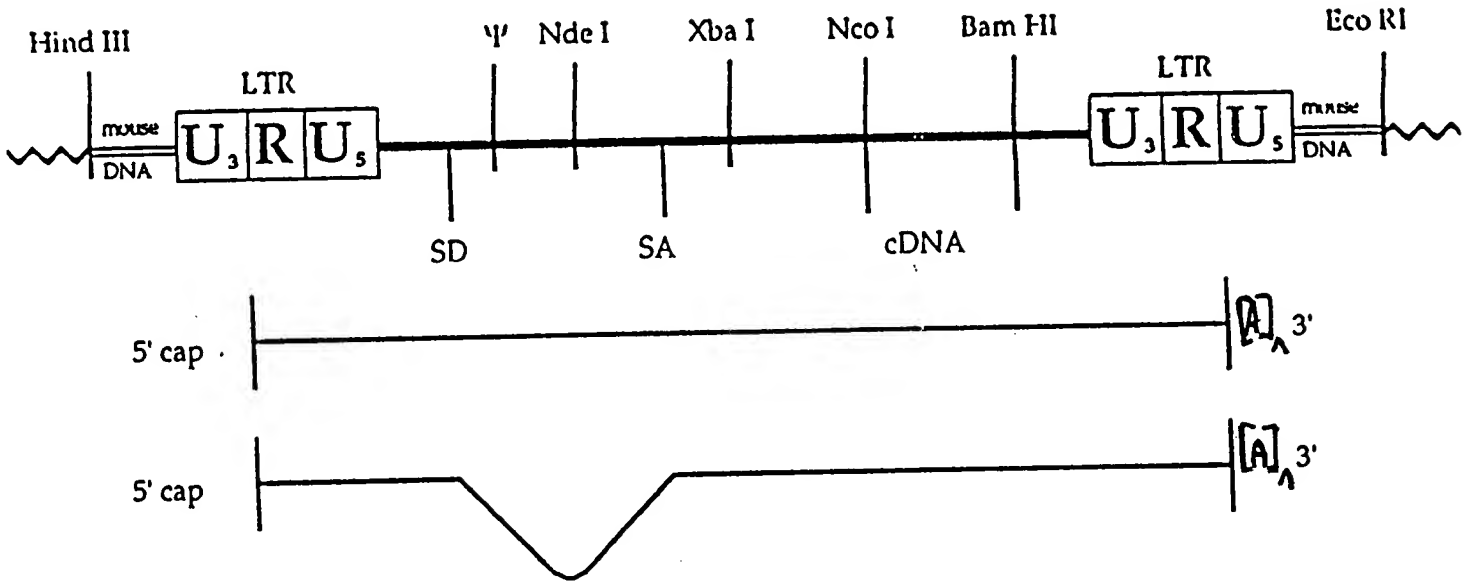
Hind III
LTR
mouse
DNA
U3 R U5
Ψ
Nde I
Xba I
Nco I
Bam HI
Eco RI
LTR
U3 R U5
mouse
DNA
SD
SA
cDNA
5' cap
[A]n 3'
5' cap
[A]n 3'

FIG. 17

```
   1  AAGCTTTGCT CTTAGGAGTT TCCTAATACA TCCCAAACTC AAATATATAA AGCATTTGAC
      TTCGAAACGA GAATCCTCAA AGGATTATGT AGGGTTTGAG TTTATATATT TCGTAAACTG

  61  TTGTTCTATG CCCTAGGGGG CGGGGGGAAG CTAAGCCAGC TTTTTTTAAC ATTTAAAATG
      AACAAGATAC GGGATCCCCC GCCCCCCTTC GATTCGGTCG AAAAAAATTG TAAATTTTAC

 121  TTAATTCCAT TTTAAATGCA CAGATGTTTT TATTTCATAA GGGTTTCAAT GTGCATGAAT
      AATTAAGGTA AAATTTACGT GTCTACAAAA ATAAAGTATT CCCAAAGTTA CACGTACTTA

 181  GCTGCAATAT TCCTGTTACC AAAGCTAGTA TAAATAAAAA TAGATAAACG TGGAAATTAC
      CGACGTTATA AGGACAATGG TTTCGATCAT ATTTATTTTT ATCTATTTGC ACCTTTAATG

 241  TTAGAGTTTC TGTCATTAAC GTTTCCTTCC TCAGTTGACA ACATAAATGC GCTGCTGAGC
      AATCTCAAAG ACAGTAATTG CAAAGGAAGG AGTCAACTGT TGTATTTACG CGACGACTCG

 301  AAGCCAGTTT GCATCTGTCA GGATCAATTT CCCATTATGC CAGTCATATT AATTACTAGT
      TTCGGTCAAA CGTAGACAGT CCTAGTTAAA GGGTAATACG GTCAGTATAA TTAATGATCA

 361  CAATTAGTTG ATTTTTATTT TTGACATATA CATGTGAATG AAAGACCCCA CCTGTAGGTT
      GTTAATCAAC TAAAAATAAA AACTGTATAT GTACACTTAC TTTCTGGGGT GGACATCCAA

 421  TGGCAAGCTA GCTTAAGTAA CGCCATTTTG CAAGGCATGG AAAAATACAT AACTGAGAAT
      ACCGTTCGAT CGAATTCATT GCGGTAAAAC GTTCCGTACC TTTTTATGTA TTGACTCTTA

 481  AGAAAAGTTC AGATCAAGGT CAGGAACAGA TGGAACAGCT GAATATGGGC CAAACAGGAT
      TCTTTTCAAG TCTAGTTCCA GTCCTTGTCT ACCTTGTCGA CTTATACCCG GTTTGTCCTA

 541  ATCTGTGGTA AGCAGTTCCT GCCCCGGCTC AGGGCCAAGA ACAGATGGAA CAGCTGAATA
      TAGACACCAT TCGTCAAGGA CGGGGCCGAG TCCCGGTTCT TGTCTACCTT GTCGACTTAT

 601  TGGGCCAAAC AGGATATCTG TGGTAAGCAG TTCCTGCCCC GGCTCAGGGC CAAGAACAGA
      ACCCGGTTTG TCCTATAGAC ACCATTCGTC AAGGACGGGG CCGAGTCCCG GTTCTTGTCT

 661  TGGTCCCCAG ATGCGGTCCA GCCCTCAGCA GTTTCTAGAG AACCATCAGA TGTTTCCAGG
      ACCAGGGGTC TACGCCAGGT CGGGAGTCGT CAAAGATCTC TTGGTAGTCT ACAAAGGTCC

 721  GTGCCCCAAG GACCTGAAAT GACCCTGTGC CTTATTTGAA CTAACCAATC AGTTCGCTTC
      CACGGGGTTC CTGGACTTTA CTGGGACACG GAATAAACTT GATTGGTTAG TCAAGCGAAG

 781  TCGCTTCTGT TCGCGCGCTT CTGCTCCCCG AGCTCAATAA AAGAGCCCAC AACCCCTCAC
      AGCGAAGACA AGCGCGCGAA GACGAGGGGC TCGAGTTATT TTCTCGGGTG TTGGGGAGTG

 841  TCGGGGCGCC AGTCCTCCGA TTGACTGAGT CGCCCGGGTA CCCGTGTATC CAATAAACCC
      AGCCCCGCGG TCAGGAGGCT AACTGACTCA GCGGGCCCAT GGGCACATAG GTTATTTGGG

 901  TCTTGCAGTT GCATCCGACT TGTGGTCTCG CTGTTCCTTG GGAGGGTCTC CTCTGAGTGA
      AGAACGTCAA CGTAGGCTGA ACACCAGAGC GACAAGGAAC CCTCCCAGAG GAGACTCACT

 961  TTGACTACCC GTCAGCGGGG GTCTTTCATT TGGGGGCTCG TCCGGGATCG GGAGACCCCT
      AACTGATGGG CAGTCGCCCC CAGAAAGTAA ACCCCCGAGC AGGCCCTAGC CCTCTGGGGA

1021  GCCCAGGGAC CACCGACCCA CCACCGGGAG GTAAGCTGGC CAGCAACTTA TCTGTGTCTG
      CGGGTCCCTG GTGGCTGGGT GGTGGCCCTC CATTCGACCG GTCGTTGAAT AGACACAGAC
```

FIG. 17

```
2281  GCGCGGATCC GGATTAGT[redacted] AATTTGTTAA AGACAGGATA TC[redacted]GGTCC AGGCTCTAGT
      CGCGCCTAGG CCTAATCAGG TTAAACAATT TCTGTCCTAT AGTCACCAGG TCCGAGATCA

2341  TTTGACTCAA CAATATCACC AGCTGAAGCC TATAGAGTAC GAGCCATAGA TAAAATAAAA
      AAACTGAGTT GTTATAGTGG TCGACTTCGG ATATCTCATG CTCGGTATCT ATTTTATTTT

2401  GATTTTATTT AGTCTCCAGA AAAAGGGGGG AATGAAAGAC CCCACCTGTA GGTTTGGCAA
      CTAAAATAAA TCAGAGGTCT TTTTCCCCCC TTACTTTCTG GGGTGGACAT CCAAACCGTT

2461  GCTAGCTTAA GTAACGCCAT TTTGCAAGGC ATGGAAAAAT ACATAACTGA GAATAGAGAA
      CGATCGAATT CATTGCGGTA AAACGTTCCG TACCTTTTTA TGTATTGACT CTTATCTCTT

2521  GTTCAGATCA AGGTCAGGAA CAGATGGAAC AGCTGAATAT GGGCCAAACA GGATATCTGT
      CAAGTCTAGT TCCAGTCCTT GTCTACCTTG TCGACTTATA CCCGGTTTGT CCTATAGACA

2581  GGTAAGCAGT TCCTGCCCCG GCTCAGGGCC AAGAACAGAT GGAACAGCTG AATATGGGCC
      CCATTCGTCA AGGACGGGGC CGAGTCCCGG TTCTTGTCTA CCTTGTCGAC TTATACCCGG

2641  AAACAGGATA TCTGTGGTAA GCAGTTCCTG CCCCGGCTCA GGGCCAAGAA CAGATGGTCC
      TTTGTCCTAT AGACACCATT CGTCAAGGAC GGGGCCGAGT CCCGGTTCTT GTCTACCAGG

2701  CCAGATGCGG TCCAGCCCTC AGCAGTTTCT AGAGAACCAT CAGATGTTTC CAGGGTGCCC
      GGTCTACGCC AGGTCGGGAG TCGTCAAAGA TCTCTTGGTA GTCTACAAAG GTCCCACGGG

2761  CAAGGACCTG AAATGACCCT GTGCCTTATT TGAACTAACC AATCAGTTCG CTTCTCGCTT
      GTTCCTGGAC TTTACTGGGA CACGGAATAA ACTTGATTGG TTAGTCAAGC GAAGAGCGAA

2821  CTGTTCGCGC GCTTCTGCTC CCCGAGCTCA ATAAAAGAGC CCACAACCCC TCACTCGGGG
      GACAAGCGCG CGAAGACGAG GGGCTCGAGT TATTTTCTCG GGTGTTGGGG AGTGAGCCCC

2881  CGCCAGTCCT CCGATTGACT GAGTCGCCCG GGTACCCGTG TATCCAATAA ACCCTCTTGC
      GCGGTCAGGA GGCTAACTGA CTCAGCGGGC CCATGGGCAC ATAGGTTATT TGGGAGAACG

2941  AGTTGCATCC GACTTGTGGT CTCGCTGTTC CTTGGGAGGG TCTCCTCTGA GTGATTGACT
      TCAACGTAGG CTGAACACCA GAGCGACAAG GAACCCTCCC AGAGGAGACT CACTAACTGA

3001  ACCCGTCAGC GGGGGTCTTT CACACATGCA GCATGTATCA AAATTAATTT GGTTTTTTTT
      TGGGCAGTCG CCCCCAGAAA GTGTGTACGT CGTACATAGT TTTAATTAAA CCAAAAAAAA

3061  CTTAAGTATT TACATTAAAT GGCCATAGTA CTTAAAGTTA CATTGGCTTC CTTGAAATAA
      GAATTCATAA ATGTAATTTA CCGGTATCAT GAATTTCAAT GTAACCGAAG GAACTTTATT

3121  ACATGGAGTA TTCAGAATGT GTCATAAATA TTTCTAATTT TAAGATAGTA TCTCCATTGG
      TGTACCTCAT AAGTCTTACA CAGTATTTAT AAAGATTAAA ATTCTATCAT AGAGGTAACC

3181  CTTTCTACTT TTTCTTTTAT TTTTTTTTGT CCTCTGTCTT CCATTTGTTG TTGTTGTTGT
      GAAAGATGAA AAAGAAAATA AAAAAAAACA GGAGACAGAA GGTAAACAAC AACAACAACA

3241  TTGTTTGTTT GTTTGTTGGT TGGTTGGTTA ATTTTTTTTT AAAGATCCTA CACTATAGTT
      AACAAACAAA CAAACAACCA ACCAACCAAT TAAAAAAAAA TTTCTAGGAT GTGATATCAA

3301  CAAGCTAGAC TATTAGCTAC TCTGTAACCC AGGGTGACCT TGAAGTCATG GGTAGCCTGC
      GTTCGATCTG ATAATCGATG AGACATTGGG TCCCACTGGA ACTTCAGTAC CCATCGGACG

3361  TGTTTTAGCC TTCCCACATC TAAGATTACA GGTATGAGCT ATCATTTTTG GTATATTGAT
      ACAAAATCGG AAGGGTGTAG ATTCTAATGT CCATACTCGA TAGTAAAAAC CATATAACTA

3421  TGATTGATTG ATTGATGTGT GTGTGTGTGA TTGTGTTTGT GTGTGTGANT GTGWANATGT
      ACTAACTAAC TAACTACACA CACACACACT AACACAAACA CACACACTNA CACWTNTACA
```

FIG. 17

```
1081  TCCGATTGTC TAGTGTCTAT GACTGATTTT ATGCGCCTGC GTCGGTACTA GTTAGCTAAC
      AGGCTAACAG ATCACAGATA CTGACTAAAA TACGCGGACG CAGCCATGAT CAATCGATTG

1141  TAGCTCTGTA TCTGGCGGAC CCGTGGTGGA ACTGACGAGT TCGGAACACC CGGCCGCAAC
      ATCGAGACAT AGACCGCCTG GGCACCACCT TGACTGCTCA AGCCTTGTGG GCCGGCGTTG

1201  CCTGGGAGAC GTCCCAGGGA CTTCGGGGGC CGTTTTTGTG GCCCGACCTG AGTCCTAAAA
      GGACCCTCTG CAGGGTCCCT GAAGCCCCCG GCAAAAACAC CGGGCTGGAC TCAGGATTTT

1261  TCCCGATCGT TTAGGACTCT TTGGTGCACC CCCCTTAGAG GAGGGATATG TGGTTCTGGT
      AGGGCTAGCA AATCCTGAGA AACCACGTGG GGGGAATCTC CTCCCTATAC ACCAAGACCA

1321  AGGAGACGAG AACCTAAAAC AGTTCCCGCC TCCGTCTGAA TTTTTGCTTT CGGTTTGGGA
      TCCTCTGCTC TTGGATTTTG TCAAGGGCGG AGGCAGACTT AAAAACGAAA GCCAAACCCT

1381  CCGAAGCCGC GCCGCGCGTC TTGTCTGCTG CAGCATCGTT CTGTGTTGTC TCTGTCTGAC
      GGCTTCGGCG CGGCGCGCAG AACAGACGAC GTCGTAGCAA GACACAACAG AGACAGACTG

1441  TGTGTTTCTG TATTTGTCTG AAAATATGGG CCCGGGCTAG ACTGTTACCA CTCCCTTAAG
      ACACAAAGAC ATAAACAGAC TTTTATACCC GGGCCCGATC TGACAATGGT GAGGGAATTC

1501  TTTGACCTTA GGTCACTGGA AAGATGTCGA GCGGATCGCT CACAACCAGT CGGTAGATGT
      AAACTGGAAT CCAGTGACCT TTCTACAGCT CGCCTAGCGA GTGTTGGTCA GCCATCTACA

1561  CAAGAAGAGA CGTTGGGTTA CCTTCTGCTC TGCAGAATGG CCAACCTTTA ACGTCGGATG
      GTTCTTCTCT GCAACCCAAT GGAAGACGAG ACGTCTTACC GGTTGGAAAT TGCAGCCTAC

1621  GCCGCGAGAC GGCACCTTTA ACCGAGACCT CATCACCCAG GTTAAGATCA AGGTCTTTTC
      CGGCGCTCTG CCGTGGAAAT TGGCTCTGGA GTAGTGGGTC CAATTCTAGT TCCAGAAAAG

1681  ACCTGGCCCG CATGGACACC CAGACCAGGT CCCCTACATC GTGACCTGGG AAGCCTTGGC
      TGGACCGGGC GTACCTGTGG GTCTGGTCCA GGGGATGTAG CACTGGACCC TTCGGAACCG

1741  TTTTGACCCC CCTCCCTGGG TCAAGCCCTT TGTACACCCT AAGCCTCCGC CTCCTCTTCC
      AAAACTGGGG GGAGGGACCC AGTTCGGGAA ACATGTGGGA TTCGGAGGCG GAGGAGAAGG

1801  TCCATCCGCC CCGTCTCTCC CCCTTGAACC TCCTCGTTCG ACCCCGCCTC GATCCTCCCT
      AGGTAGGCGG GGCAGAGAGG GGGAACTTGG AGGAGCAAGC TGGGGCGGAG CTAGGAGGGA

1861  TTATCCAGCC CTCACTCCTT CTCTAGGCGC CCCCATATGG CCATATGAGA TCTTATATGG
      AATAGGTCGG GAGTGAGGAA GAGATCCGCG GGGGTATACC GGTATACTCT AGAATATACC

1921  GGCACCCCCG CCCCTTGTAA ACTTCCCTGA CCCTGACATG ACAAGAGTTA CTAACAGCCC
      CCGTGGGGGC GGGGAACATT TGAAGGGACT GGGACTGTAC TGTTCTCAAT GATTGTCGGG

1981  CTCTCTCCAA GCTCACTTAC AGGCTCTCTA CTTAGTCCAG CACGAAGTCT GGAGACCTCT
      GAGAGAGGTT CGAGTGAATG TCCGAGAGAT GAATCAGGTC GTGCTTCAGA CCTCTGGAGA

2041  GGCGGCAGCC TACCAAGAAC AACTGGACCG ACCGGTGGTA CCTCACCCTT ACCGAGTCGG
      CCGCCGTCGG ATGGTTCTTG TTGACCTGGC TGGCCACCAT GGAGTGGGAA TGGCTCAGCC

2101  CGACACAGTG TGGGTCCGCC GACACCAGAC TAAGAACCTA GAACCTCGCT GGAAAGGACC
      GCTGTGTCAC ACCCAGGCGG CTGTGGTCTG ATTCTTGGAT CTTGGAGCGA CCTTTCCTGG

2161  TTACACAGTC CTGCTGACCA CCCCCACCGC CCTCAAAGTA GACGGCATCG CAGCTTGGAT
      AATGTGTCAG GACGACTGGT GGGGGTGGCG GGAGTTTCAT CTGCCGTAGC GTCGAACCTA

2221  ACACGCCGCC CACGTGAAGG CTGCCGACCC CGGGGGTGGA CCATCCTCTA GACTGCCATG
      TGTGCGGCGG GTGCACTTCC GACGGCTGGG GCCCCCACCT GGTAGGAGAT CTGACGGTAC
```

FIG. 17

```
3481 GTGTATGGNT GTGTGTGAKT GTGTGTATGT ATGNYTGTGT GTGANTGYGT GTGTGTGANT
     CACATACCNA CACACACTMA CACACATACA TACNRACACA CACTNACRCA CACACACTNA

3541 GTGCATGTGT GTGTGTGTGA CTGTGTCTAT GTGTATGACT GTGTGTGTGT GTGTGTGTGT
     CACGTACACA CACACACACT GACACAGATA CACATACTGA CACACACACA CACACACACA

3601 GTGTGTGTGT GTGTGTGTGT GTGTGTTGTG AAAAAATATT CTATGGTAGT GAGAGCCAAC
     CACACACACA CACACACACA CACACAACAC TTTTTTATAA GATACCATCA CTCTCGGTTG

3661 GCTCCGGCTC AGGTGTCAGG TTGGTTTTTG AGACAGAGTC TTTCACTTAG CTTGGAATTC
     CGAGGCCGAG TCCACAGTCC AACCAAAAAC TCTGTCTCAG AAAGTGAATC GAACCTTAAG

3721 TTGAAGACGA AAGGGCCTCG TGATACGCCT ATTTTTATAG GTTAATGTCA TGATAATAAT
     AACTTCTGCT TTCCCGGAGC ACTATGCGGA TAAAAATATC CAATTACAGT ACTATTATTA

3781 GGTTTCTTAG ACGTCAGGTG GCACTTTTCG GGGAAATGTG CGCGGAACCC CTATTTGTTT
     CCAAAGAATC TGCAGTCCAC CGTGAAAAGC CCCTTTACAC GCGCCTTGGG GATAAACAAA

3841 ATTTTTCTAA ATACATTCAA ATATGTATCC GCTCATGAGA CAATAACCCT GATAAATGCT
     TAAAAAGATT TATGTAAGTT TATACATAGG CGAGTACTCT GTTATTGGGA CTATTTACGA

3901 TCAATAATAT TGAAAAAGGA AGAGTATGAG TATTCAACAT TTCCGTGTCG CCCTTATTCC
     AGTTATTATA ACTTTTTCCT TCTCATACTC ATAAGTTGTA AAGGCACAGC GGGAATAAGG

3961 CTTTTTTGCG GCATTTTGCC TTCCTGTTTT TGCTCACCCA GAAACGCTGG TGAAAGTAAA
     GAAAAAACGC CGTAAAACGG AAGGACAAAA ACGAGTGGGT CTTTGCGACC ACTTTCATTT

4021 AGATGCTGAA GATCAGTTGG GTGCACGAGT GGGTTACATC GAACTGGATC TCAACAGCGG
     TCTACGACTT CTAGTCAACC CACGTGCTCA CCCAATGTAG CTTGACCTAG AGTTGTCGCC

4081 TAAGATCCTT GAGAGTTTTC GCCCCGAAGA ACGTTTTCCA ATGATGAGCA CTTTTAAAGT
     ATTCTAGGAA CTCTCAAAAG CGGGGCTTCT TGCAAAAGGT TACTACTCGT GAAAATTTCA

4141 TCTGCTATGT GGCGCGGTAT TATCCCGTGT TGACGCCGGG CAAGAGCAAC TCGGTCGCCG
     AGACGATACA CCGCGCCATA ATAGGGCACA ACTGCGGCCC GTTCTCGTTG AGCCAGCGGC

4201 CATACACTAT TCTCAGAATG ACTTGGTTGA GTACTCACCA GTCACAGAAA AGCATCTTAC
     GTATGTGATA AGAGTCTTAC TGAACCAACT CATGAGTGGT CAGTGTCTTT TCGTAGAATG

4261 GGATGGCATG ACAGTAAGAG AATTATGCAG TGCTGCCATA ACCATGAGTG ATAACACTGC
     CCTACCGTAC TGTCATTCTC TTAATACGTC ACGACGGTAT TGGTACTCAC TATTGTGACG

4321 GGCCAACTTA CTTCTGACAA CGATCGGAGG ACCGAAGGAG CTAACCGCTT TTTTGCACAA
     CCGGTTGAAT GAAGACTGTT GCTAGCCTCC TGGCTTCCTC GATTGGCGAA AAAACGTGTT

4381 CATGGGGGAT CATGTAACTC GCCTTGATCG TTGGGAACCG GAGCTGAATG AAGCCATACC
     GTACCCCCTA GTACATTGAG CGGAACTAGC AACCCTTGGC CTCGACTTAC TTCGGTATGG

4441 AAACGACGAG CGTGACACCA CGATGCCTGC AGCAATGGCA ACAACGTTGC GCAAACTATT
     TTTGCTGCTC GCACTGTGGT GCTACGGACG TCGTTACCGT TGTTGCAACG CGTTTGATAA

4501 AACTGGCGAA CTACTTACTC TAGCTTCCCG GCAACAATTA ATAGACTGGA TGGAGGCGGA
     TTGACCGCTT GATGAATGAG ATCGAAGGGC CGTTGTTAAT TATCTGACCT ACCTCCGCCT

4561 TAAAGTTGCA GGACCACTTC TGCGCTCGGC CCTTCCGGCT GGCTGGTTTA TTGCTGATAA
     ATTTCAACGT CCTGGTGAAG ACGCGAGCCG GGAAGGCCGA CCGACCAAAT AACGACTATT

4621 ATCTGGAGCC GGTGAGCGTG GGTCTCGCGG TATCATTGCA GCACTGGGGC CAGATGGTAA
     TAGACCTCGG CCACTCGCAC CCAGAGCGCC ATAGTAACGT CGTGACCCCG GTCTACCATT
```

FIG. 17

```
4681  GCCCTCCCGT ATCGTAGT  TCTACACGAC GGGGAGTCAG GC  CTATGG ATGAACGAAA
      CGGGAGGGCA TAGCATCAAT AGATGTGCTG CCCCTCAGTC CGTTGATACC TACTTGCTTT

4741  TAGACAGATC GCTGAGATAG GTGCCTCACT GATTAAGCAT TGGTAACTGT CAGACCAAGT
      ATCTGTCTAG CGACTCTATC CACGGAGTGA CTAATTCGTA ACCATTGACA GTCTGGTTCA

4801  TTACTCATAT ATACTTTAGA TTGATTTAAA ACTTCATTTT TAATTTAAAA GGATCTAGGT
      AATGAGTATA TATGAAATCT AACTAAATTT TGAAGTAAAA ATTAAATTTT CCTAGATCCA

4861  GAAGATCCTT TTTGATAATC TCATGACCAA AATCCCTTAA CGTGAGTTTT CGTTCCACTG
      CTTCTAGGAA AAACTATTAG AGTACTGGTT TTAGGGAATT GCACTCAAAA GCAAGGTGAC

4921  AGCGTCAGAC CCCGTAGAAA AGATCAAAGG ATCTTCTTGA GATCCTTTTT TTCTGCGCGT
      TCGCAGTCTG GGGCATCTTT TCTAGTTTCC TAGAAGAACT CTAGGAAAAA AAGACGCGCA

4981  AATCTGCTGC TTGCAAACAA AAAAACCACC GCTACCAGCG GTGGTTTGTT TGCCGGATCA
      TTAGACGACG AACGTTTGTT TTTTTGGTGG CGATGGTCGC CACCAAACAA ACGGCCTAGT

5041  AGAGCTACCA ACTCTTTTTC CGAAGGTAAC TGGCTTCAGC AGAGCGCAGA TACCAAATAC
      TCTCGATGGT TGAGAAAAAG GCTTCCATTG ACCGAAGTCG TCTCGCGTCT ATGGTTTATG

5101  TGTCCTTCTA GTGTAGCCGT AGTTAGGCCA CCACTTCAAG AACTCTGTAG CACCGCCTAC
      ACAGGAAGAT CACATCGGCA TCAATCCGGT GGTGAAGTTC TTGAGACATC GTGGCGGATG

5161  ATACCTCGCT CTGCTAATCC TGTTACCAGT GGCTGCTGCC AGTGGCGATA AGTCGTGTCT
      TATGGAGCGA GACGATTAGG ACAATGGTCA CCGACGACGG TCACCGCTAT TCAGCACAGA

5221  TACCGGGTTG GACTCAAGAC GATAGTTACC GGATAAGGCG CAGCGGTCGG GCTGAACGGG
      ATGGCCCAAC CTGAGTTCTG CTATCAATGG CCTATTCCGC GTCGCCAGCC CGACTTGCCC

5281  GGGTTCGTGC ACACAGCCCA GCTTGGAGCG AACGACCTAC ACCGAACTGA GATACCTACA
      CCCAAGCACG TGTGTCGGGT CGAACCTCGC TTGCTGGATG TGGCTTGACT CTATGGATGT

5341  GCGTGAGCTA TGAGAAAGCG CCACGCTTCC CGAAGGGAGA AAGGCGGACA GGTATCCGGT
      CGCACTCGAT ACTCTTTCGC GGTGCGAAGG GCTTCCCTCT TTCCGCCTGT CCATAGGCCA

5401  AAGCGGCAGG GTCGGAACAG GAGAGCGCAC GAGGGAGCTT CCAGGGGGAA ACGCCTGGTA
      TTCGCCGTCC CAGCCTTGTC CTCTCGCGTG CTCCCTCGAA GGTCCCCCTT TGCGGACCAT

5461  TCTTTATAGT CCTGTCGGGT TTCGCCACCT CTGACTTGAG CGTCGATTTT TGTGATGCTC
      AGAAATATCA GGACAGCCCA AAGCGGTGGA GACTGAACTC GCAGCTAAAA ACACTACGAG

5521  GTCAGGGGGG CGGAGCCTAT GGAAAAACGC CAGCAACGCG GCCTTTTTAC GGTTCCTGGC
      CAGTCCCCCC GCCTCGGATA CCTTTTTGCG GTCGTTGCGC CGGAAAAATG CCAAGGACCG

5581  CTTTTGCTGG CCTTTTGCTC ACATGTTCTT TCCTGCGTTA TCCCCTGATT CTGTGGATAA
      GAAAACGACC GGAAAACGAG TGTACAAGAA AGGACGCAAT AGGGGACTAA GACACCTATT

5641  CCGTATTACC GCCTTTGAGT GAGCTGATAC CGCTCGCCGC AGCCGAACGA CCGAGCGCAG
      GGCATAATGG CGGAAACTCA CTCGACTATG GCGAGCGGCG TCGGCTTGCT GGCTCGCGTC

5701  CGAGTCAGTG AGCGAGGAAG CGGAAGAGCG CCTGATGCGG TATTTTCTCC TTACGCATCT
      GCTCAGTCAC TCGCTCCTTC GCCTTCTCGC GGACTACGCC ATAAAAGAGG AATGCGTAGA

5761  GTGCGGTATT TCACACCGCA TATGGTGCAC TCTCAGTACA ATCTGCTCTG ATGCCGCATA
      CACGCCATAA AGTGTGGCGT ATACCACGTG AGAGTCATGT TAGACGAGAC TACGGCGTAT

5821  GTTAAGCCAG TATACACTCC GCTATCGCTA CGTGACTGGG TCATGGCTGC GCCCCGACAC
      CAATTCGGTC ATATGTGAGG CGATAGCGAT GCACTGACCC AGTACCGACG CGGGGCTGTG
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FIG. 17

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5881  CCGCCAACAC CCGCTGACG GCCCTGACGG GCTTGTCTGC TCCCGGCATC CGCTTACAGA
      GGCGGTTGTG GGCGACTGCG CGGGACTGCC CGAACAGACG AGGGCCGTAG GCGAATGTCT

5941  CAAGCTGTGA CCGTCTCCGG GAGCTGCATG TGTCAGAGGT TTTCACCGTC ATCACCGAAA
      GTTCGACACT GGCAGAGGCC CTCGACGTAC ACAGTCTCCA AAAGTGGCAG TAGTGGCTTT

6001  CGCGCGAGGC AGCTGCGGTA AAGCTCATCA GCGTGGTCGT GAAGCGATTC ACAGATGTCT
      GCGCGCTCCG TCGACGCCAT TTCGAGTAGT CGCACCAGCA CTTCGCTAAG TGTCTACAGA

6061  GCCTGTTCAT CCGCGTCCAG CTCGTTGAGT TTCTCCAGAA GCGTTAATGT CTGGCTTCTG
      CGGACAAGTA GGCGCAGGTC GAGCAACTCA AAGAGGTCTT CGCAATTACA GACCGAAGAC

6121  ATAAAGCGGG CCATGTTAAG GGCGGTTTTT TCCTGTTTGG TCACTTGATG CCTCCGTGTA
      TATTTCGCCC GGTACAATTC CCGCCAAAAA AGGACAAACC AGTGAACTAC GGAGGCACAT

6181  AGGGGGAATT TCTGTTCATG GGGGTAATGA TACCGATGAA ACGAGAGAGG ATGCTCACGA
      TCCCCCTTAA AGACAAGTAC CCCCATTACT ATGGCTACTT TGCTCTCTCC TACGAGTGCT

6241  TACGGGTTAC TGATGATGAA CATGCCCGGT TACTGGAACG TTGTGAGGGT AAACAACTGG
      ATGCCCAATG ACTACTACTT GTACGGGCCA ATGACCTTGC AACACTCCCA TTTGTTGACC

6301  CGGTATGGAT GCGGCGGGAC CAGAGAAAAA TCACTCAGGG TCAATGCCAG CGCTTCGTTA
      GCCATACCTA CGCCGCCCTG GTCTCTTTTT AGTGAGTCCC AGTTACGGTC GCGAAGCAAT

6361  ATACAGATGT AGGTGTTCCA CAGGGTAGCC AGCAGCATCC TGCGATGCAG ATCCGGAACA
      TATGTCTACA TCCACAAGGT GTCCCATCGG TCGTCGTAGG ACGCTACGTC TAGGCCTTGT

6421  TAATGGTGCA GGGCGCTGAC TTCCGCGTTT CCAGACTTTA CGAAACACGG AAACCGAAGA
      ATTACCACGT CCCGCGACTG AAGGCGCAAA GGTCTGAAAT GCTTTGTGCC TTTGGCTTCT

6481  CCATTCATGT TGTTGCTCAG GTCGCAGACG TTTTGCAGCA GCAGTCGCTT CACGTTCGCT
      GGTAAGTACA ACAACGAGTC CAGCGTCTGC AAAACGTCGT CGTCAGCGAA GTGCAAGCGA

6541  CGCGTATCGG TGATTCATTC TGCTAACCAG TAAGGCAACC CCGCCAGCCT AGCCGGGTCC
      GCGCATAGCC ACTAAGTAAG ACGATTGGTC ATTCCGTTGG GGCGGTCGGA TCGGCCCAGG

6601  TCAACGACAG GAGCACGATC ATGCGCACCC GTGGCCAGGA CCCAACGCTG CCCGAGATGC
      AGTTGCTGTC CTCGTGCTAG TACGCGTGGG CACCGGTCCT GGGTTGCGAC GGGCTCTACG

6661  GCCGCGTGCG GCTGCTGGAG ATGGCGGACG CGATGGATAT GTTCTGCCAA GGGTTGGTTT
      CGGCGCACGC CGACGACCTC TACCGCCTGC GCTACCTATA CAAGACGGTT CCCAACCAAA

6721  GCGCATTCAC AGTTCTCCGC AAGAATTGAT TGGCTCCAAT TCTTGGAGTG GTGAATCCGT
      CGCGTAAGTG TCAAGAGGCG TTCTTAACTA ACCGAGGTTA AGAACCTCAC CACTTAGGCA

6781  TAGCGAGGTG CCGCCGGCTT CCATTCAGGT CGAGGTGGCC CGGCTCCATG CACCGCGACG
      ATCGCTCCAC GGCGGCCGAA GGTAAGTCCA GCTCCACCGG GCCGAGGTAC GTGGCGCTGC

6841  CAACGCGGGG AGGCAGACAA GGTATAGGGC GGCGCCTACA ATCCATGCCA ACCCGTTCCA
      GTTGCGCCCC TCCGTCTGTT CCATATCCCG CCGCGGATGT TAGGTACGGT TGGGCAAGGT

6901  TGTGCTCGCC GAGGCGGCAT AAATCGCCGT GACGATCAGC GGTCCAGTGA TCGAAGTTAG
      ACACGAGCGG CTCCGCCGTA TTTAGCGGCA CTGCTAGTCG CCAGGTCACT AGCTTCAATC

6961  GCTGGTAAGA GCCGCGAGCG ATCCTTGAAG CTGTCCCTGA TGGTCGTCAT CTACCTGCCT
      CGACCATTCT CGGCGCTCGC TAGGAACTTC GACAGGGACT ACCAGCAGTA GATGGACGGA

7021  GGACAGCATG GCCTGCAACG CGGGCATCCC GATGCCGCCG GAAGCGAGAA GAATCATAAT
      CCTGTCGTAC CGGACGTTGC GCCCGTAGGG CTACGGCGGC CTTCGCTCTT CTTAGTATTA
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FIG. 17

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7081  GGGGAAGGCC ATCCAGCCTC GCGTCGCGAA CGCCAGCAAG ACGTAGCCCA GCGCGTCGGC
      CCCCTTCCGG TAGGTCGGAG CGCAGCGCTT GCGGTCGTTC TGCATCGGGT CGCGCAGCCG

7141  CGCCATGCCG GCGATAATGG CCTGCTTCTC GCCGAAACGT TTGGTGGCGG GACCAGTGAC
      GCGGTACGGC CGCTATTACC GGACGAAGAG CGGCTTTGCA AACCACCGCC CTGGTCACTG

7201  GAAGGCTTGA GCGAGGGCGT GCAAGATTCC GAATACCGCA AGCGACAGGC CGATCATCGT
      CTTCCGAACT CGCTCCCGCA CGTTCTAAGG CTTATGGCGT TCGCTGTCCG GCTAGTAGCA

7261  CGCGCTCCAG CGAAAGCGGT CCTCGCCGAA AATGACCCAG AGCGCTGCCG GCACCTGTCC
      GCGCGAGGTC GCTTTCGCCA GGAGCGGCTT TTACTGGGTC TCGCGACGGC CGTGGACAGG

7321  TACGAGTTGC ATGATAAAGA AGACAGTCAT AAGTGCGGCG ACGATAGTCA TGCCCCGCGC
      ATGCTCAACG TACTATTTCT TCTGTCAGTA TTCACGCCGC TGCTATCAGT ACGGGGCGCG

7381  CCACCGGAAG GAGCTGACTG GGTTGAAGGC TCTCAAGGGC ATCGGTCGAC GCTCTCCCTT
      GGTGGCCTTC CTCGACTGAC CCAACTTCCG AGAGTTCCCG TAGCCAGCTG CGAGAGGGAA

7441  ATGCGACTCC TGCATTAGGA AGCAGCCCAG TAGTAGGTTG AGGCCGTTGA GCACCGCCGC
      TACGCTGAGG ACGTAATCCT TCGTCGGGTC ATCATCCAAC TCCGGCAACT CGTGGCGGCG

7501  CGCAAGGAAT GGTGCATGCA AGGAGATGGC GCCCAACAGT CCCCCGGCCA CGGGGCCTGC
      GCGTTCCTTA CCACGTACGT TCCTCTACCG CGGGTTGTCA GGGGGCCGGT GCCCCGGACG

7561  CACCATACCC ACGCCGAAAC AAGCGCTCAT GAGCCCGAAG TGGCGAGCCC GATCTTCCCC
      GTGGTATGGG TGCGGCTTTG TTCGCGAGTA CTCGGGCTTC ACCGCTCGGG CTAGAAGGGG

7621  ATCGGTGATG TCGGCGATAT AGGCGCCAGC AACCGCACCT GTGGCGCCGG TGATGCCGGC
      TAGCCACTAC AGCCGCTATA TCCGCGGTCG TTGGCGTGGA CACCGCGGCC ACTACGGCCG

7681  CACGATGCGT CCGGCGTAGA GCGCCACAGG ACGGGTGTGG TCGCCATGAT CGCGTAGTCG
      GTGCTACGCA GGCCGCATCT CGCGGTGTCC TGCCCACACC AGCGGTACTA GCGCATCAGC

7741  ATAGTGGCTC CAAGTAGCGA AGCGAGCAGG ACTGGGCGGC GGCCAAAGCG GTCGGACAGT
      TATCACCGAG GTTCATCGCT TCGCTCGTCC TGACCCGCCG CCGGTTTCGC CAGCCTGTCA

7801  GCTCCGAGAA CGGGTGCGCA TAGAAATTGC ATCAACGCAT ATAGCGCTAG CAGCACGCCA
      CGAGGCTCTT GCCCACGCGT ATCTTTAACG TAGTTGCGTA TATCGCGATC GTCGTGCGGT

7861  TAGTGACTGG CGATGCTGTC GGAATGGACG ATATCCCGCA AGAGGCCCGG CAGTACCGGC
      ATCACTGACC GCTACGACAG CCTTACCTGC TATAGGGCGT TCTCCGGGCC GTCATGGCCG

7921  ATAACCAAGC CTATGCCTAC AGCATCCAGG GTGACGGTGC CGAGGATGAC GATGAGCGCA
      TATTGGTTCG GATACGGATG TCGTAGGTCC CACTGCCACG GCTCCTACTG CTACTCGCGT

7981  TTGTTAGATT TCATACACGG TGCCTGACTG CGTTAGCAAT TTAACTGTGA TAAACTACCG
      AACAATCTAA AGTATGTGCC ACGGACTGAC GCAATCGTTA AATTGACACT ATTTGATGGC

8041  CATTA
      GTAAT
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